USDA, National Agricultural Statistics Service

Indiana Crop & Weather Report

Released: October 24, 2011
Vol. 61, WC102411

USDA, NASS, Indiana Field Office
1435 Win Hentschel Blvd.
Suite 110
West Lafayette, IN 47906-4151
(765) 494-8371
nass-in@nass.usda.gov

CROP REPORT FOR WEEK ENDING OCTOBER 23

AGRICULTURAL SUMMARY

Producers made limited progress during the week as harvest was kept to a minimum due to unfavorably cool, wet weather, according to the Indiana Field Office of USDA's National Agricultural Statistics Service. Wind downed corn in many areas in the northern part of the state. Frost was observed across the state. Corn harvest is moving at a slow pace but is still well ahead of the record late year of 1967 when the corn harvest was only about 10 percent complete at this same time of year. Corn harvest is running about 9 days behind the 5-year average pace and soybean harvest is approximately 3 days behind average.

FIELD CROPS REPORT

There were 3.3 **days suitable for field work**. Ninety-four percent of the **corn** acreage is **mature** compared to 100 percent last year and 95 percent for the 5-year average. Forty-two percent of the corn acreage has been **harvested**, compared to 95 percent last year and 55 percent for the 5-year average. By area, approximately 35 percent of the corn acreage has been harvested in the north, 38 percent in the central region and 62 percent in the south. **Moisture content** of harvested corn is averaging about 20 percent. **Corn condition** is rated 36 percent good to excellent.

Sixty-eight percent of the **soybean** acreage has been **harvested** compared with 95 percent last year and 73 percent for the 5-year average. By area, approximately 74 percent of the soybean acreage has been harvested in the north, 71 percent in the central region and 51 percent in the south. **Moisture content** of harvested soybeans is averaging about 12 percent.

Seventy-three percent of the **winter wheat** acreage has been **planted** compared to 85 percent last year and 72 percent for the 5-year average. Thirty-four percent of the **winter wheat** acreage has **emerged** compared to 36 percent for both last year and the 5-year average. **Winter wheat condition** is rated 57 percent good to excellent compared to 23 percent last year.

LIVESTOCK, PASTURE AND RANGE REPORT

Pasture condition is rated 27 percent good to excellent compared with 4 percent last year. **Livestock** were reported to be in mostly good condition. Feedlots and pastures are becoming muddy due to the heavy rainfall across the state.

CROP PROGRESS

Crop	This Week	Last Week	Last Year	5-Year Avg.
	Percent			
Corn Mature	94	87	100	95
Corn Harvested	42	30	95	55
Soybeans Harvested	68	55	95	73
Winter Wheat Planted	73	51	85	72
Winter Wheat Emerged	34	14	36	36

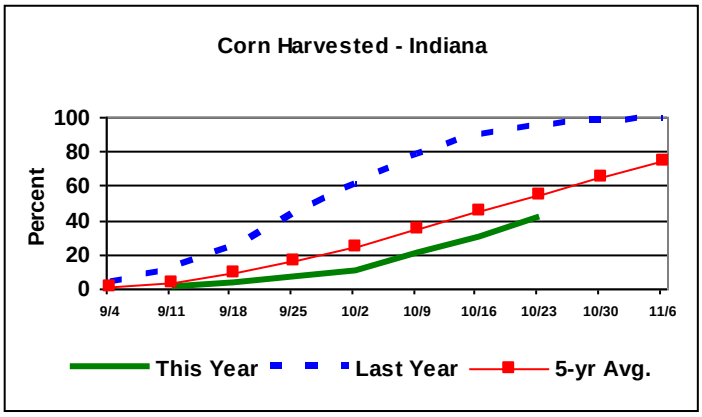
CROP CONDITION

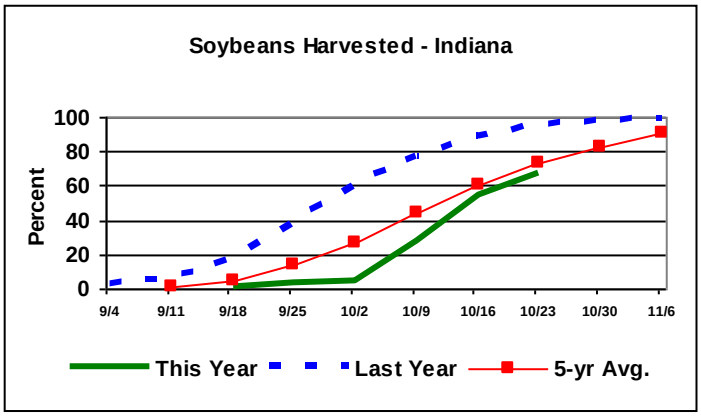
Crop	Very Poor	Poor	Fair	Good	Excel-lent
	Percent				
Corn	8	17	39	31	5
Winter Wheat	0	2	41	53	4
Pasture	7	22	44	25	2

SOIL MOISTURE & DAYS SUITABLE FOR FIELDWORK

Soil Moisture	This Week	Last Week	Last Year
	Percent		
Topsoil			
Very Short	2	4	64
Short	10	22	30
Adequate	68	71	6
Surplus	20	3	0
Subsoil			
Very Short	7	11	60
Short	21	32	33
Adequate	64	56	7
Surplus	8	1	0
Days Suitable	3.3	5.2	6.8

CONTACT INFORMATION
--Greg Preston, Director
--Kif Hurlbut, Agricultural Statistician
E-mail Address: nass-in@nass.usda.gov
http://www.nass.usda.gov/Statistics_by_State/Indiana/





Other Agricultural Comments And News

TEST WEIGHT ISSUES IN CORN

Written by R.L. (Bob) Nielsen, Agronomy Dept., Purdue University. Article appears in the Corny News Network and can be found at:
http://www.agry.purdue.edu/ext/corn/news/timeless/TestWeight.html

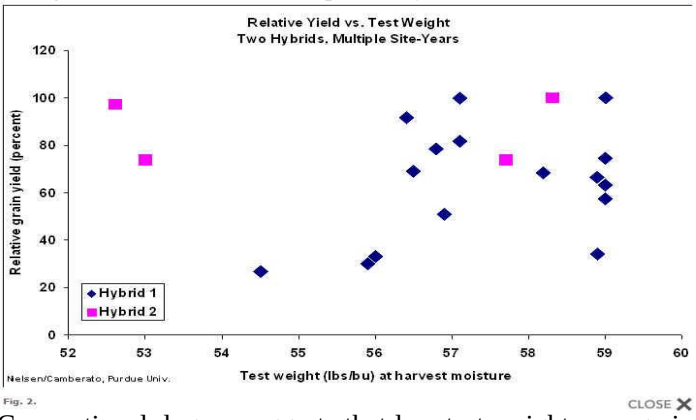
Among the top 10 most discussed (and cussed) topics at hometown cafes during harvest season is the test weight of the grain being reported from corn fields in the neighborhood. Test weight is measured in the U.S. in terms of pounds of grain per volumetric bushel. In practice, test weight measurements are based on the weight of grain that fills a quart container (32 qts to a bushel) that meets the specifications of the USDA-FGIS (GIPSA) for official inspection (Fig. 1, available online). Certain electronic moisture meters, like the Dickey-John GAC, estimate test weight based on a smaller-volume cup. These test weight estimates are reasonably accurate but are not accepted for official grain trading purposes.

The official minimum allowable test weight in the U.S. for No. 1 yellow corn is 56 lbs/bu and for No. 2 yellow corn is 54 lbs/bu (USDA-GIPSA, 1996). Corn grain in the U.S. is marketed on the basis of a 56-lb "bushel" regardless of test weight. Even though grain moisture is not part of the U.S. standards for corn, grain buyers pay on the basis of "dry" bushels (15 to 15.5% grain moisture content) or discount the purchase price to account for the drying expenses they will incur with corn grain wetter than 15 or 15.5% moisture.

Growers worry about low test weight because local grain buyers often discount their offered price to farmers for low test weight grain. In addition, growers are naturally disappointed when they deliver a 1000-bu semi-load of grain with an average 52-lb test weight because they only get paid for 929 56-lb "market" bushels (52,000 lbs ÷ 56 lbs/bu).

On the other hand, high test weight grain makes growers feel good when they deliver a 1000 bushel semi-load of grain with an average 60 lb test weight because they will get paid for 1071 56-lb "market" bushels (60,000 lbs ÷ 56 lbs/bu). These emotions encourage a belief that high test weight grain is associated with high grain yields (lbs. of dry matter per acre) and vice versa. However, there is little evidence in the research literature that corn test weight is strongly correlated with grain yield.

Hybrid variability exists for grain test weight, but also does not necessarily correspond to differences in genetic yield potential. Test weight for a given hybrid can vary from field to field or year to year, but does not necessarily correspond to the yield level of an environment. The graph in Fig. 2 illustrates the absence of a strong correlation between relative grain yield and test weight for two hybrids grown in our nitrogen rate trials over multiple site-years in Indiana.



Conventional dogma suggests that low test weight corn grain results in lower processor efficiency and quality of processed end-use products like corn starch, though the research literature does not consistently support this belief. Similarly, low test corn grain is often thought to be inferior for animal feed quality, though again the research literature is not in agreement on this. Whether or not low test weight grain is inferior to higher test weight grain may depend on the cause of the low test weight in the first place.

Common Causes of Low Test Weight Corn

Back in the 2009 harvest season in Indiana, there were more reports of low test weight corn grain than good or above average test weights. There were primarily six factors that account for most of the low test weight grain in 2009 and four shared a common overarching effect.

First and foremost, growers should understand that test weight and grain moisture are inversely related. The higher the grain moisture, the lower the test weight. As grain dries in the field or in the dryer, test weight naturally increases as long as kernel integrity remains intact. Test weight increases as grain dries partly because kernel volume tends to shrink with drying and so more kernels pack into a volume bushel and partly because drier grain is slicker which tends to encourage kernels to pack more tightly in a volume bushel.

(continued on page 4)

Weather Information Table

Week Ending Sunday, October 23, 2011

Station	Past Week Weather Summary Data							Accumulation				
	Air Temperature				Precip.		Avg 4 in Soil Temp	April 1, 2011 through October 23, 2011				
								Precipitation			GDD Base 50°F	
	Hi	Lo	Avg	DFN	Total	Days		Total	DFN	Days	Total	DFN
Northwest (1)												
Chalmers_5W	67	30	47	-6	1.61	3		33.88	+9.90	81	3063	-126
Francesville	64	29	45	-6	1.84	3		30.98	+6.58	84	3048	+134
Valparaiso_AP_I	64	33	47	-6	2.40	4		29.71	+3.28	82	3113	+195
Wanatah	64	25	43	-8	2.52	4	52	34.75	+9.44	100	2679	-90
Winamac	64	31	46	-6	2.17	4		36.01	+11.61	92	3010	+96
North Central (2)												
Plymouth	63	31	45	-7	2.64	4		33.21	+8.02	87	3022	-47
South_Bend	62	33	47	-5	3.13	4		31.55	+7.01	89	3248	+372
Young_America	66	31	45	-6	2.06	3		32.96	+9.21	73	3138	+126
Northeast (3)												
Fort_Wayne	65	31	48	-4	3.04	3		29.42	+7.68	88	3456	+434
Kendallville	61	31	46	-5	2.75	4		35.36	+12.61	114	3047	+204
West Central (4)												
Greencastle	74	28	45	-9	2.90	4		33.79	+6.45	84	3143	-284
Perrysville	70	29	48	-5	2.18	4	53	26.15	+0.70	76	3502	+324
Spencer_Ag	77	30	47	-6	2.16	4		33.04	+5.74	75	3561	+362
Terre_Haute_AFB	77	30	48	-6	2.51	4		30.99	+5.26	81	3724	+325
W_Lafayette_6NW	67	33	46	-6	1.79	4	49	34.68	+10.59	84	3308	+299
Central (5)												
Eagle_Creek_AP	72	30	47	-7	2.29	4		31.84	+7.76	82	3734	+369
Greenfield	75	30	47	-6	2.88	4		37.04	+10.66	96	3485	+251
Indianapolis_AP	75	34	49	-5	2.25	4		28.30	+4.22	77	3966	+601
Indianapolis_SE	73	31	46	-8	2.61	5		35.86	+11.19	87	3398	+39
Tipton_Ag	70	30	46	-5	2.50	4	56	35.74	+10.95	84	3227	+317
East Central (6)												
Farmland	63	32	47	-5	2.85	4	56	29.56	+5.81	91	3244	+407
New_Castle	74	28	47	-5	2.66	4		38.38	+13.07	84	3151	+241
Southwest (7)												
Evansville	83	34	52	-4	0.56	3		43.25	+18.80	67	4355	+439
Freelandville	79	35	49	-5	1.71	4		32.45	+7.03	64	3950	+436
Shoals_8S	85	28	48	-6	1.60	3		38.23	+10.76	69	3626	+219
Stendal	82	37	51	-4	1.27	2		47.76	+20.59	67	3983	+304
Vincennes_5NE	82	35	50	-5	1.13	4	53	41.86	+16.44	72	3988	+474
South Central (8)												
Leavenworth	81	35	51	-3	1.05	3		39.20	+11.56	88	3950	+568
Oolitic	80	29	48	-5	1.70	4	53	41.52	+15.06	86	3505	+263
Tell_City	83	33	53	-4	0.74	2		38.91	+11.15	69	4183	+388
Southeast (9)												
Brookville	80	29	49	-3	2.54	4		34.70	+9.23	93	3636	+564
Greensburg	80	32	48	-4	1.93	4		36.75	+11.11	79	3728	+578
Seymour	80	30	48	-5	2.02	3		37.04	+11.76	73	3478	+244

DFN = Departure From Normal.
GDD = Growing Degree Days.
Precipitation (Rainfall or melted snow/ice) in inches.
Precipitation Days = Days with precip of .01 inch or more.
Air Temperatures in Degrees Fahrenheit.

For more weather information, visit www.awis.com or call 1-888-798-9955.

Therefore in a year like 2009 with many of the initial harvest reports of grain moisture ranging from 25 to 30% instead of the usual starting moisture levels of about 20 to 23%, it should not be surprising that test weights were lower than expected. Hellevang (1995) offered a simple formula for estimating the increase in test weight with grain drying. In its simplest form, the equation is (A/B) x C; where A = 100 - dry moisture content, B = 100 - wet moisture content, and C = test weight at wet moisture content. The author does not say, but I suspect this simple formula is most applicable within a "normal" range of harvest moistures; up to moistures in the mid- to high 20's.

Example: Dry moisture = 15%, Wet moisture = 25%, Test weight at 25% = 52 lbs/bu.

Test weight at 15% moisture = ((100 - 15) / (100 - 25)) x 52 = (85/75) x 52 = 58.9 lbs/bu

An older reference (Hall & Hill, 1974) offers an alternative suggestion for adjusting test weight for harvest moisture that also accounts for the level of kernel damage in the harvested grain (Table 1). The table values are based on the premise that kernel damage itself lowers test weight to begin with and that further drying of damaged grain results in less of an increase in test weight that what occurs in undamaged grain. Compared to the results from using Hellevang's simple formula, adjustments to test weight using these tabular values tend to result in smaller adjustments to test weight for high moisture grain at harvest, but larger adjustments for drier grain at harvest.

Table 1. Adjustment added to the wet-harvest test weight to obtain an expected test weight level after drying to 15.5 percent moisture

Percent	Grain moisture at harvest (percent)							
damage	30	28	26	24	22	20	18	16
45	0.3							
40	0.7	0.2						
35	1.3	0.7						
30	1.8	1.3	0.8					
25	2.4	1.9	1.4	0.9	0.3			
20	3.1	2.6	2.0	1.5	1.0	0.5		
15	3.8	3.2	2.7	2.2	1.7	1.2	0.6	0.2
10	4.5	4.0	3.5	2.9	2.2	1.9	1.4	0.8
5	5.3	4.7	4.2	3.7	3.0	2.7	2.1	1.6
0	6.1	5.6	5.0	4.5	4.0	3.5	2.9	2.4

Source: Hall & Hill, 1974

Secondly, thirdly, and fourthly; drought stress, late-season foliar leaf diseases (primarily gray leaf spot and northern corn leaf blight), and below normal temperatures throughout September of 2009 all resulted in a significant deterioration of the crop's photosynthetic machinery beginning in early to mid-September that "pulled the rug out from beneath" the successful completion of the grain filling period in some fields; resulting in less than optimum starch deposition in the kernels. Fifthly, early October frost/freeze damage to late-developing, immature fields resulted in leaf or whole plant death that effectively put an end to the grain-filling process with the same negative effect on test weight.

Finally, there were widespread reports of ear rots (diplodia, gibberella, etc.) throughout many areas of Indiana in 2009. Kernel damage by these fungal pathogens results in light-weight, chaffy grain that also results in low test weight diseased grain, broken kernels, and excessive levels of foreign material. This cause of low test weight grain obviously results in inferior (if not toxic) animal feed quality grain, unacceptable end-use processing consequences (ethanol yield, DDGS quality, starch yield and quality, etc.), and difficulties in storing the damaged grain without further deterioration.

Related references can be viewed online.

The INDIANA CROP & WEATHER REPORT (USPS 675-770), (ISSN43-817X) is issued weekly April through November by the USDA, NASS Indiana Field Office, 1435 Win Hentschel Blvd, Suite 110, West Lafayette, IN 47906-4151. For information on subscribing, send request to above address. POSTMASTER: Send address change to the USDA, NASS, Indiana Field Office, 1435 Win Hentschel Blvd, Suite 110, West Lafayette, IN 47906-4151.

INDIANA CROP & WEATHER REPORT
USDA, NASS, INDIANA FIELD OFFICE
1435 WIN HENTSHCEL BLVD, STE 110
WEST LAFAYETTE IN 47906-4151

FIRST-CLASS MAIL
POSTAGE & FEES PAID
USDA
PERMIT NO. G-38